

# ROYAL COMMISSION ON AGRICULTURE AND RURAL LIFE

# CROP INSURANCE

This pamphlet contains the conclusions and recommendations from the Commission's Official Report on Crop Insurance, together with some of the illustrative material from the Official Report.

The pamphlet is designed to aid study programs of communities and organizations, which will lead to broader public understanding of the issues involed in this aspect of the Commission's investigation.

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# Crop Insurance

# THE CONCLUSIONS AND RECOMMENDATIONS OF THE ROYAL COMMISSION ON AGRICULTURE AND RURAL LIFE

#### Risks of Crop Loss High in Saskatchewan

Man's endeavour to control his environment has made only limited headway against the extremes of weather and other natural forces affecting crop production on the Canadian prairies. Drought, hail, frost, rust, flood, excessive moisture, and a number of other visitations annually take their toll of prairie crops. The year 1954 in Saskatchewan stands as a recent stark reminder of the extreme uncertainties of farming—a year in which the wheat crop was less than half the size of the crop in the previous year and net farm income was only one-fourth as large.

#### **Individual Protection**

Since the causes of varying yields are as yet largely beyond the control of either the farmer or society, the problem becomes one of counteracting the effects of these variations. Several alternatives present themselves. As an individual, the farmer can, within narrow limits, store his excess production in one year to make up a deficit in another year. Or he can utilize individual cash savings or credit to tide him over the bad years. A few costs, but not many, can be reduced in years of crop failure. On the whole, how-

ever, other factors affecting farm income, together with the fact that crop failures are sometimes successive, severely limit the ability of the individual farmer to protect his income and investment from the effects of varying yields.

#### Social Remedy

The social remedy which has received widest consideration is crop insurance. Crop insurance rests on the assumption that yields, averaged over a long term, are sufficient to provide the average farmer with a satisfactory income, provided prices are adequate. By spreading production risks over many individuals exposed to those risks, by spreading losses over many areas and many years, crop insurance makes it possible for the farmer to substitute regular annual premium costs for irregular and unpredictable losses.

#### No Inherent Contradictions

Since crop insurance attempts only to average out the returns from actual crop yields over a period of years, there are no fundamental contradictions which deny its workability. The difficulties in implementing a crop insurance program lie in accurately determining long-term average yields, in devising the

mechanics of a satisfactory plan, in providing the necessary financial reserves, and so on. The principal goal of the Commission in undertaking this study was to construct the framework for a self-liquidating crop insurance scheme to be launched on an experimental basis in a limited area. Through an experimental approach, experience could then be gained under prairie conditions while limiting the liability of sponsoring governments to a realistic level. With an operating crop insurance program under way,

successful plans gradually could be applied to an expanding area until practical limits were reached.

In the conclusions which follow, detailed attention is given to the operations of the Prairie Farm Assistance Act and the United States Crop Insurance Corporation. With the past experience of these two programs as a guide, subsequent conclusions outline the basic considerations underlying the establishment of a pilot crop insurance program in Saskatchewan.

# Public Opinion

1. Although a succession of high yields had temporarily lessened the urgency of crop insurance at the time of Commission hearings, a substantial proportion of communities and organizations drew attention to the limitations of P.F.A.A. and to the need for crop insurance. P.F.A.A. was considered to be inadequate, particularly with respect to the size of indemnity payments

and its failure to make payments on the basis of individual farm losses. Nearly all submissions mentioning crop insurance favoured its adoption; most suggested compulsory participation. There was also a general feeling that, although farmers should pay their own way to the maximum degree possible, some government subsidy would be required.

# Crop Insurance Studies and Proposals in the Prairie Provinces

# Continuing Interest

2. Consideration of crop insurance proposals has been mainly concentrated in those years following widespread low yields and crop failures. Nevertheless, crop insurance has claimed the continuing interest of prairie farmers and their organizations, as well as provincial governments, for many years. Interest has again been heightened following 1954 crop experience in Manitoba and Saskatchewan.

# Not Optimistic

3. In total, studies of the feasibility of crop insurance in the three prairie provinces have been less than optimistic. Some of the studies, including those of W. J. Hansen and R. E. Motherwell in Saskatchewan, were thorough and careful in their analysis. Yet there are factors which, to a degree, qualify some of the darker conclusions which emerged from some of these studies:

- (a) Early studies could not look to any existing program for actual operational data,
- (b) Data on yields were sketchy and sometimes unreliable.
- (c) Most plans contemplated a purely provincial program with its

associated concentration of risk and burdensome financial liability. Few, even among the more recent, considered joint federal-provincial participation.

(d) Some failed to give sufficient consideration to excluding submarginal farms and those farms in the areas of highest risk from participation in a crop insurance program.

(e) Some concentrated their attention largely on insuring individual farms, a costly type of protection.

# Prairie Farm Assistance Act

#### Legislative Intent

4. It was the intent of the Federal Government, in introducing the Prairie Farm Assistance Act, to establish a minimum program of crop insurance. The Act was also intended to provide a vehicle for distributing relief payments to farmers on the basis of need. This dual purpose is evident in debate and testimony relevant to the enactment of P.F.A.A. These sources also reveal that benefits of P.F.A.A. were intended to cover a large share of the farmer's cash costs of production in 1939.

#### **Includes Basic Elements**

5. P.F.A.A. contains the basic elements of area yield crop insurance. Premiums are paid on the basis of percentage of marketings (one per cent of value per bushel) by all farmers who market grains commercially. Indemnities are paid on the basis of area yield. When the average yield of wheat per acre falls below specified levels in any rectangular block of 18 sections or more, all farmers in the area are eligible for awards. Coverage applies to half of each farmer's cultivated land, to a maximum of 400 acres  $(400 \div 2 = 200)$ .

# High Risk Areas Gain

6. The ratio of P.F.A.A. levies paid to the amount returned in indemnities varies widely by regions. In Manitoba, farmers have received only two-thirds of the amount paid in levies. Both Alberta and Saskat-

chewan farmers, however, have received more in indemnities than they have paid in levies: Alberta, 68 per cent more; Saskatchewan, 155 per cent more. Similar differences are observable between areas within provinces.

#### Risks Shared

7. P.F.A.A. fails to discriminate between regions or farms on the basis of actual risks involved in growing a crop. Per acre coverage is the same for all farms; yet premiums are collected as a fixed proportion of the value of grain sold. Thus, some farmers pay high premiums with little likelihood of ever receiving awards, while others, paying lower premiums, collect more in a wards than they will ever pay in levies.

# **Individual Inequities**

8. Payment of indemnities on the basis of average area yield results in individual inequities. Because eligibility for indemnities is determined by the average yield of fairly large blocks of land, some farmers who do not suffer losses receive payments. Conversely, other individual farmers, victims of localized crop damage, are not reimbursed even if they suffer complete crop failure.

#### Unjust Exclusions

9. Certain exclusions under P.F.A.A. are unjust. Some blocks of alienated Crown land are excluded from participation despite their

Summary of One Per Cent Levy, Prairie Farm Assistance Act, Canada, 1939-1954

Crop Year	Manitoba	Sask- atchewan	Alberta	Unallocated	Total Levy
ore on		Do	llars		
1939-40	333,453	1,344,208	743,122	724	2,421,507
1940-41	354,814	1,360,540	866,832	502	2,582,688
1941-42	339,970	711,869	407,642	272	1,459,754
1942-43	481,975	1,536,146	710,633	323	2,729,075
1943-44	779,491	2,743,544	1,191,301	371	4,714,707
1944-45	754,336	3,218,572	1,412,417	231	5,385,587
1945-46	575,409	1,997,736	873,083	132	3,426,358
1946-47	845,632	2,703,357	1,644,706	112	5,193,808
1947-48	764,744	2,727,188	1,624,237	148	5,116,318
1948-49	1,120,741	3,417,481	2,084,089	6,186	6,628,496
1949-50	1,355,660	4,525,629	2,515,568	198	8,397,055
1950-51	1,442,138	3,890,445	2,001,323	154	7,334,059
1951-52	1,331,549	5,075,404	2,560,007	117	8,967,076
1952-53	1,423,816	6,370,894	3,074,384	5,117	10,874,312
1953-54	973,248	4,939,452	2,069,163	5,158	7,987,032
1954-55	748,694	3,169,787	1,614,486	152	5,533,120
Total	13,625,810	49,712,252	25,392,993	19,897	88,750,952

suitability for farming. Some producers, farming a combination of irrigated and dry land, are effectively excluded from coverage despite significant contributions in the form of levies on wheat. A recent amendment to P.F.A.A. removed another exclusion which applied to land flooded prior to seeding.

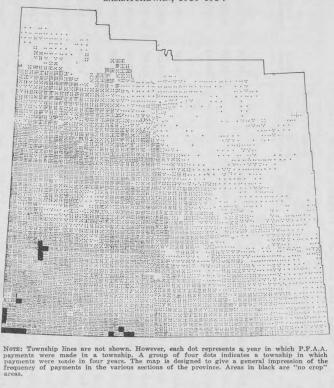
#### Low Benefits

10. Despite a number of significant changes in the farm economy during the past 15 years, P.F.A.A. benefits remain at 1939 levels. Because of increased prices for wheat, the one per cent levy now yields an amount several times as large as it did in 1939. Also, farm costs have doubled and the average cultivated acreage per farm has increased one-third; yet indemnity payments and the maximum acreage eligible remain at 1939 levels. Modification of the original Act

SUMMARY OF PRAIRIE FARM ASSISTANCE PAYMENTS, CANADA, 1939-1954

	Total Payments	69	9,910,016	6,722,555	15,513,406	1	7,479,216	5,977,548	16,967,651	10,831,906	17,237,671	14,140,466	22,050,618	10,484,722	4,656,342	1,570,883	2,770,566	32,659,711	178,973,277
	Total		58,566	51,570	84,362	1	31,358	21,138	62,816	47,503	75,843	61,804	85,206	57,537	25,125	209'6	16,318	152,552	841,305
British Columbia	Total Payment	69	1	1	1	1	1	1	1	1	4,166	1	1	214,186	29,889	42,286	1	82,728	373,255
British (	No. of Awards		1	1	1	1	1	1	1	1	50	1	1	1,334	275	468	1	592	2,719
Alberta	Total Payment	69	1,429,708	504,179	3,466,120	1	2,425,058	2,833,763	4,395,734	1,620,922	3,375,089	2,544,572	6,343,796	4,314,372	2,171,141	532,102	1,007,525	5,763,082	42,727,163
All	No. of Awards		12,142	4,356	20,880	1	9,232	9,145	18,951	7,130	17,277	14,735	33,477	26,486	11,949	4,001	5,548	33,859	229,168
Saskatchewan	Total Payment	69	7,574,891	5,603,267	12,010,772	1	5,037,473	2,980,283	12,541,768	9,204,821	13,368,006	11,532,256	15,373,733	5,608,926	2,247,920	810,803	1,143,177	21,804,086	126,842,182
Saska	No. of Awards		39,464	40,846	62,473	1	22,000	10,576	43,437	40,286	58,892	46,581	49,657	26,601	11,073	3,969	5,740	89,657	547,252
Manitoba	Total Payment	69	905,417	615,109	36,513	1	16,685	163,502	30,149	6,163	490,411	63,639	333,089	347,239	207,393	185,692	619,863	5,009,814	9,030,678
Mai	No. of Awards		096'9	6,368	1,009	1	126	1,417	428	87	3,624	488	2,072	3,116	1,828	1,169	5,030	28,444	62,166
	Year		1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	Total

FREQUENCY OF PRAIRIE FARM ASSISTANCE PAYMENTS BY TOWNSHIPS, SASKATCHEWAN, 1939-1954



NOTE: Township lines are not shown. However, each dot represents a year in which P.F.A.A. payments were made in a township. A group of four dots indicates a township in which payments were made in four years. The map is designed to give a general impression of the frequency of payments in the various sections of the province. Areas in black are "no crop" areas.

has permitted smaller areas and greater numbers of farms to qualify for payments, but the scale of payments has not been raised.

#### **Modification Possible**

11. P.F.A.A. is capable of being modified to correct some deficiencies and to provide a workable system of area yield crop insurance. A large share of present inequities could be removed by relatively

minor amendments to the Act. More difficult, but still feasible, would be a separation of the crop insurance and relief functions under the Act. This would eliminate submarginal. high risk areas from the crop insurance program. Assuming these modifications, what would remain would be a compulsory system of area yield crop insurance. A reasonable increase in levies would permit

a somewhat higher level of benefits on a self-liquidating basis.

#### Limitations of Single Rate Structure

12. The best crop insurance scheme under the P.F.A.A.'s single rate structure would still not meet the standard of individual equity. Lower risk areas would, in effect, continue to subsidize higher risk areas. If a principal objective of crop insurance is to eliminate or lessen the averaging of risks, the current P.F.A.A. program will not qualify. It then becomes necessary to examine alternative approaches.

#### P.F.A.A. Must Continue

13. Whatever developments take place in crop insurance, a revamped P.F.A.A. will still be required. During the lengthy transition period necessary to develop and extend crop insurance to its practical limits,

P.F.A.A. protection will be essential for those farms not covered. Beyond that period, P.F.A.A. can be envisaged as a permanent relief program for uninsurable farms in high risk areas. Thus, P.F.A.A. and crop insurance would be complementary but separate programs.

#### P.F.A.A. and Uneconomic Units

14. Ultimately, consideration must be given to the effect that P.F.A.A. has in subsidizing submarginal farm units. Assuming the development of a crop insurance program that would include most insurable farms, P.F.A.A. will become primarily concerned with uninsurable high risk areas. At such a time, or sooner, serious attention should be devoted to the question of integrating P.F.A.A. with a development program designed to achieve proper land use and to create economic farm units.

# United States Crop Insurance

#### PRINCIPAL FEATURES

# Federal Subsidy

15. Crop insurance in the United States is provided through a government corporation on a non-profit basis. The program is subsidized to the extent that the initial capital stock of \$100 million was furnished by the government and administrative expenses to a limit of \$12 million are appropriated annually by Congress. Premiums are required to be set at the amounts necessary to cover probable losses. Recent policy adjustments indicate that it is intended to reduce the extent of government subsidy gradually.

# "All-Risk" Coverage

16. United States crop insurance is "all-risk" insurance, offering pro-

tection against nearly every conceivable natural hazard. A variety of crops may be insured, but consideration here is limited largely to wheat. Wheat insurance, available in over 400 counties in 1954, accounted for 29 per cent of all contracts and almost 60 per cent of premium earnings.

# Variable Level of Coverage

17. Subject to upper limits, the level of coverage is variable. Under the Crop Insurance Act, coverage per acre offered on an individual farm crop is limited to: (1) an amount not exceeding the per acre cost of producing the crop generally in the area; and (2) in any case, an amount not exceeding 75 per cent of the average yield. Subject to these limits, coverage is set with

an eye to premium costs and the desires of the farmers in the area.

#### **Small Rate Areas**

18. Premium rates and coverage are determined on the basis of small areas of similar yields and risks. The actuarial unit is the county. Two steps are involved in setting premium rates and coverage: (1) the central underwriting division in Washington determines the average coverage and average rate for each county in which insurance is offered: (2) within each county, coverage and rates are established for subdivisions of similar productivity and risk. These subdivisions are determined by considering a number of factors, including crop yield data, soil productivity, and the prevalence of specific hazards. Records of previous crop insurance experience are becoming more important as the program develops. The main requirement within the county is that rates and coverage of the various subdivisions must "add up" to the county averages established by the national office.

#### **Individual Indemnities**

19. Indemnities are determined on the basis of individual farm (insurance unit) yield. Claims for damage are filed by the individual farmer. One or more crop inspections are made by the corporation to determine the harvested yield. Indemnities are paid on the basis of the difference between the harvested yield per acre and the level of coverage.

# **Voluntary Participation**

20. Participation in the crop insurance program is voluntary. The farmer purchases crop insurance much as he would any other type

of insurance. His contract continues from year to year unless cancelled either by himself or by the Corporation. The Crop Insurance Act requires, however, that insurance can be provided in a county only if applications cover at least 200 farms or, if less, that they cover at least one-third of the eligible farms normally producing the insurable crop.

#### **Administrative Divisions**

21. Administratively, the Crop Insurance Corporation is made up of three principal divisions - the headquarters, branch office, and field administrations. Functions of the headquarters office are predominantly to determine policy, to plan and develop the insurance program, to establish coverage and premium rates, and to supervise all activities. The branch office in Chicago is concerned almost exclusively with processing insurance contracts. For purposes of field administration, the United States is divided into four areas, each supervised by an area director. Subdivisions of each area are under state directors who supervise the activities of all counties within their subdivisions.

# County Office

22. The local level of administration is the county. The county office is concerned primarily with selling and servicing insurance, accepting acreage reports and premiums, and handling claims and loss adjustments. Until 1953, most local administration was in the hands of county committees of the Production and Marketing Administration of the Department of Agriculture. Today, however, local offices are headed by crop insurance

agents—a move undertaken to place crop insurance on a sound commercial basis. The adjustment of claims — a most important aspect of the United States program — is handled at the local level by the crop insurance adjuster, who is directly responsible to the state director.

#### EXPERIENCE RECORD

# Annual Net Cost: \$11 Million

23. From 1939 through the fiscal year 1953, the U.S. crop insurance program showed a net cost to the federal treasury of \$162 million. The average annual cost thus has approximated \$11 million. About half this total represents administrative expenses, while the remainder represents the balance of indemnities over premiums. It should be noted, however, that practically all of the indemnity deficit was incurred in the years prior to 1948, by which

time the entire crop insurance program had been revamped. Costs after 1948 represent administrative expenses almost exclusively.

#### Wheat Deficit

24. From 1948 through the disastrous wheat year of 1954, the wheat insurance program showed a modest deficit of \$4.6 million. During this period nearly \$82 million was paid to farmers in the form of wheat indemnities. Nearly all this amount (\$77 million) was contributed by wheat farmers in the form of premiums. In 1952, the average insured wheat farmer was afforded protection of \$15.07 per acre at a cost of \$1.25 per acre. This is an average premium cost of less than 7 per cent of coverage.

#### **Drought Chief Cause of Loss**

25. The outstanding cause of loss to wheat crops has been drought. Drought accounted for 45 per cent

Loss Ratios, United States Crop Insurance\*

				Crop Yea	ır			
Program	1948	1949	1950	1951	1952	1953	1954	Average 1948-54
Wheat	.58	1.45	.51	1.06	.85	1.25	1.46	1.06
Cotton	.43	1.97	2.80	.82	.44	1.04	.64	1.15
Multiple	.06	.16	.93	1.65	2.33	.91	1.42	1.45
Tobacco	.43	.66	.61	.49	.79	1.90	.93	.94
Corn	.17	.16	1.23	2.38	.25	.17	.69	.72
Flax	.51	.62	.41	.49	.79	.95	.77	.65
Beans	.29	.64	1.81	3.14	.55	.62	1.53	1.35
Citrus		1000	-	.00	.04	.00	.00	.01
All Programs	.53	1.32	.90	1.12	.97	1.15	1.26	1.06

<sup>\*</sup> Loss ratio is computed by dividing indemnities by premiums. A loss ratio over 1.00 indicates a deficit; a loss ratio below 1.00 indicates a surplus.

Cause	Incidence
	%
Drought	45
Excessive moisture	5
Frost, freeze, snow	_*
Winterkill	15
Hail	12
Insects	9 .
Disease	_*
Flood	_*
Miscellaneous	14

<sup>\*</sup> Small or negligible losses which have been included with miscellaneous causes.

of all losses from 1939 to 1952. Hail and winterkill have been significant but less important causes.

#### Loss Ratios Moderate in Neighbouring States

26. Operating experience with wheat insurance in Montana and North Dakota, states which most closely resemble the Canadian prairie provinces, has been somewhat different from the overall picture. Except for the years 1954 in North Dakota and 1949 in Montana, yearly loss ratios have been quite moderate from 1948 through 1954. North Dakota indemnities for the seven-year period exceeded premiums by \$1.8 million, while Montana built up a reserve of premiums over indemnities of almost \$8 million.

# Ratio of Costs to Premium Income

27. For the total crop insurance program, the ratio of administrative and operating costs to premium income is about 25 per cent. The largest single cost in these categories is contract sales and servicing. Loss adjustments and underwriting costs make up the remainder.

28. Cost ratios are much lower in Montana and North Dakota, an effect of large farms with relatively high risks. Because the insured acreage per farm in these states is larger and the rates are higher than the United States average, premium income per policy is larger; sales and service costs, therefore, are relatively less. The ratio of administrative and operating costs to premium income in Montana is 5 to 6 per cent; in North Dakota, approximately 11 per cent.

#### **EVALUATION** — MOVEMENT

#### Crop Insurance Will Work

29. United States experience to date indicates that crop insurance is workable. In reaching this conclusion, the Commission took note of three factors: (1) the program is developing and gaining experience in an uncharted area of insurance; (2) experience since 1948 indicates a significant improvement in the ratio of premiums to indemnities; and (3) the program has not been operating over a sufficient period to make more than tentative judgments. The weight of the evidence indicates, nonetheless, that the United States crop insurance program can make the necessary adjustments to offer sound crop insurance protection to a large share of the nation's farmers on a self-liquidating basis.

# Significant Contribution

30. Crop insurance has made a significant contribution to farm welfare. The main effect has been to supplant substantial relief payment and loans which otherwise would have been necessary in areas of crop failure. The farmer's credit position has been improved, and greater stability has been introduced into the uncertain enterprise of farming.

#### **Dangers Persist**

- 31. Despite significant progress, a number of dangers exist in the U.S. crop insurance program. Unless necessary adjustments are made, one or more of the following aspects of the program may have undesirable effects:
- (a) Because indemnities are paid on the basis of individual damage claims, a persistent danger exists that individuals may lack incentive to harvest maximum yields where such yields would fall near or below the level of coverage. This moral hazard could be reduced by introducing one or more safeguards in crop inspection or coverage.
- (b) The incorporation of short-term experience into county premium rates tends to raise premiums unduly after years of poor yields. The objective should be to make crop insurance self-liquidating over the long term in a manner consistent with gaining maximum participation by farmers. Therefore, long-term yields should be the basic rate-determining factor.
- (c) Adverse selectivity of risks is encouraged by the ease of "getting in or out" of crop insurance under the United States plan. The use of actual long-term contracts and other incentives to continuing participation might assist in eliminating year-by-year risk selectivity.

# Proportion of Eligible Montana and North Dakota Farmers Participating in Spring Wheat Insurance, 1949-1954

State	1949	1950	1951	1952	1953	1954
			P	er cent		
Montana	61	56	46	40	61	54
North Dakota	26	24	22	21	41	38

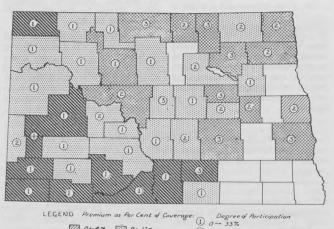
- (d) Abandonment of local screening of risks, which occurred when local committees were dispensed with, would appear to increase the hazard of adverse selectivity of risks. The employment of insurance agents, who are impelled to sell a maximum number of policies, enhances the need for an adequate screening procedure.
- (e) The unusually large proportion of premiums paid by note is potentially dangerous to the program. Alternatively, the feasibility of determining premiums as a percentage of marketings might be considered. Credit, if substantial, should be supplied from other sources.

V/ 0104 %

\$ 4 to 8 %

- (f) Reserves of the crop insurance program are too low to withstand a year of general crop failure. Reinsurance of part of the risk, combined with a reduction in the concentration of risks in certain areas, would improve the Corporation's reserve position.
- (g) Perhaps the most serious shortcoming is the low level of participation among eligible producers. In 1952 the rate among wheat producers was 29 per cent. In Montana and North Dakota the rate was somewhat higher. It would appear that, within the limits of a voluntary program, the most fruitful approach to increasing participation might be a low-coverage, low-cost contract for high risk areas.

PREMIUM RATES AND RATES OF PARTICIPATION BY COUNTIES, WHEAT INSURANCE, NORTH DAKOTA, 1954



12 10 16 %

2 33~49%

3 50~75%

# Basic Considerations in Developing a Prairie Crop Insurance Program

#### Test Area Approach

32. The most reasonable starting point for crop insurance in the prairie region is an experimental test program limited to small representative areas. Many problems in the uncharted field of insuring crops cannot be solved without actual operating experience under prairie conditions. An experimental program offers the opportunity to test several approaches to crop insurance while, at the same time, limiting liabilities to reasonable levels. With the accumulation of experience, sound programs can be extended to larger areas.

# Integration With P.F.A.A.

33. For purposes of developing a crop insurance test program, it must be assumed that the present P.F.A.A. program would continue to apply to all prairie agriculture with the exception of the test areas themselves. In these areas, the pilot crop insurance program would replace it. The two programs thus would be mutually exclusive, but together would cover the same area now covered by P.F.A.A. alone.

#### Shared Risks vs. Individual Risks

34. In selecting actuarial units for a prairie crop insurance program, the basic question revolves around shared risks (exemplified by P.F.A.A.) as opposed to individual risks. Total sharing of risks would mean a single actuarial unit embracing all insurable farms. Discriminating between individual risks would require treating each farm as a separate unit—an impractical

procedure from an administrative point of view. The practical choice lies between a large, all-embracing unit on the one hand and a number of units, each including farms subject to similar risks, on the other.

#### Large Unit vs. Small Unit

35. In the absence of actual comparative experience under prairie conditions, relative advantages and disadvantages permit no clear-cut choice between large units of varying risk and small units of homogeneous risk. From the standpoint of individual equity, the small unit containing farms subject to similar risks is most desirable. Small units, however, are costly and difficult to administer when compared with larger units in which a single rate covers a wide range of risks. Both types should therefore be included for testing in a pilot program.

# Grain Delivery Point

36. The grain delivery point offers the best compromise as a small actuarial unit. Basic requirements are that the selected unit be small enough to minimize risk differentials between farms and that adequate crop yield data for the unit be available over a long period. Tests showed the rural municipality to be too large to eliminate substantial risk differentials. To subdivide the municipality would require individual farm yield data which are not consistently available. The smaller grain delivery point area thus offers the best compromise, since reliable yield data are available from both the Saskatchewan Wheat Pool and Sanford Evans Statistical Service.

#### Adverse Risks

37. A plan of insurance based on voluntary participation permits adverse selectivity of risks. Such selectivity tends to destroy the basis of the rate structure, which presumes that risks are averaged both throughout the area and over a period of years. It is suggested, therefore, that participation in the pilot program be compulsory, and further that careful attention be given to the need for intensive education and discussion among participating farmers before the implementation of any plan.

#### **Premium Collection**

38. The most equitable method of collecting premiums would be as a proportion of grain marketings in a manner similar to the collection of the P.F.A.A. levy. Rates could be computed as a proportion of the long-term average yield; an adjustment could be made for seed grain not marketed; and collections could be made at the time of delivery to the elevator. Under such a plan no credit services would be required, and premiums would automatically be adjusted to income.

#### Local Administration

39. For administrative purposes, each test area would require a central administrative headquarters. Local administrative requirements would vary with the plan of insurance being tested, but there would be merit in experimenting with the use of local farmer committees in each rate area.

# Federal vs Provincial Responsibility

40. Potential liabilities in crop insurance—even in a test program—are beyond the fiscal capacity of a single agricultural province,

Federal participation is therefore essential. A federal program, moreover, would avoid the high concentration of risks which would inevitably occur in a provincial program. Administrative needs also make it highly desirable that the Federal Government assume the major role. Skills and experience now centered in P.F.A.A. would be invaluable in launching an experimental crop insurance program.

#### Pilot Program

41. The initial crop insurance program should be a pilot or experimental program. Experience can then be gained which will permit expansion on a sound basis. Since the need for crop insurance extends across the entire prairie agricultural area, it would be logical to apply the pilot program to typical areas throughout the three provinces. The purview of this investigation, however, is limited to Saskatchewan.

#### **Emphasis on Wheat Insurance**

42. The pilot program should be based on wheat yields in the brown and dark brown soil zones. Wheat is the major cash crop and it is covered by the most complete yield data. The brown and dark brown soil zones are the areas most completely classified according to wheat productivity. Insurance on coarse grains could be offered by relating them to wheat yields in each area.

# Need To Test Areas of Varying Risk

43. Several areas, each typical of a different level of risk, should be included. Such a procedure will secure the widest range of experience and the most useful information from an experimental program. Areas proposed are: (1) Swift Current - Shaunavon, representative of high risk areas; (2) Regina,

representative of low risk areas; and (3) Davidson - Hanley, representative of intermediate risk areas.

# Need To Test Varying Types of Insurance

44. Several types of insurance should be included. Again, the objective of gaining a maximum amount of comparative experience dictates the inclusion of varying types of insurance.

#### **Defining Rate Areas**

45. Defining rate areas depends primarily upon accurate analysis of long-term average yield and yield variance by delivery points. Yield data from 1932 are available by delivery point. Where sufficient similarity exists between adjacent delivery points, they may be combined for purposes of determining premium rates and coverage.

#### **Establishing Boundaries**

46. Boundaries of rate areas must be defined to avoid administrative

difficulties. Township boundaries provide the most convenient lines of demarcation between delivery point areas. A township can usually be classified as "belonging" to its closest delivery point. Where a given township is equidistant from two or more delivery points, information relative to its yield potential and yield variability may be used to assign it to the most logical grouping. A test grouping showed that this method permitted a fairly reasonable mapping of rate areas reflecting similar risks.

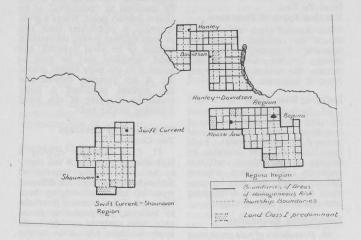
#### High Level of Coverage Too Costly

47. Crop insurance offering a high level of coverage is too costly to be useful to the majority of Saskatchewan farmers. Six different types of insurance, ranging from high-cost, high-protection insurance to low-cost, low-protection insurance, were analysed as they would apply to three test areas in the province. The practical limit for

Rural Municipalities Included in Three Proposed Test Areas in Saskatchewan

Regina (low risk)	Swift Current-Shaunavon (high risk)	Davidson-Hanley (intermediate risk)
R.M. No.	R.M. No.	R.M. No.
98	77	221
99	78	222
128	107	251
129	108	252
130	109	254
159	137	281
160	138	282
161	the military and all the same	283
162	delication and the second to	CONTRACTOR OF THE RES

# Areas of Homogeneous Risk in 24-Municipality Test Area, Saskatchewan



premium costs suggested by a number of crop insurance authorities is 10 per cent of the long-term average yield per acre. Coverage at 100 per cent—or even 75 per cent—of the long-term average yield was found to require premiums above this level for the majority of farms.

# Individual Indemnities Also Costly

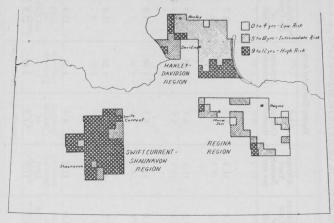
48. The premium cost of crop insurance offering indemnity payments on the basis of individual farms (insurance units) would likewise exclude a large proportion of farmers. Provided the level of coverage were not above 60 per cent of yield, however, a plan of this type would be feasible in a number of the areas of lower risk. In such a plan, premiums and

coverage would be determined for delivery points grouped in areas of similar risk. Indemnities would be paid to individual farmers and landlords when insurance unit yields fell below the level of coverage.

# Most Practical Insurance Type Defined

- 49. Group indemnity insurance offering relatively low coverage is the only type practical for the majority of farms in intermediate and high risk areas. Of the types considered, the following basic plans were found to have the widest application in the test areas:
- (a) A premium unit made up of delivery points grouped in areas of similar risk. The same premium per acre would apply to all eligible farms within the area.

# FREQUENCY OF P.F.A.A. PAYMENTS IN TEST AREA, 1939-1954



(b) An indemnity unit (i) corresponding to the premium unit or (ii) consisting of an individual delivery point. Indemnities would be paid when the average yield for the unit fell below the level of coverage. Each insured farmer in

the unit would receive the same indemnity per acre.

(c) Coverage at 60 per cent of the long-term average yield for the unit. This would be sufficient to meet the average cash costs of production.

SUMMARY OF RELATIVE COSTS OF SIX TYPES OF CROP INSURANCE, IN ORDER OF INCREASING COST

		Regina Area	a Area			Hanley-Day	Hanley-Davidson Area	
Type of Insurance*	Average Yield (bushels	Level of Coverage (bushels)	Premium (bushels)	Premium as Per Cent of Yield	Average Yield (bushels per acre)	Level of Coverage (bushels)	Premium (bushels)	Premium as Per Cent of Yield
Type B Premium Unit: Group Indemnity Unit: Group Coverage: 60%	15.6	9.3	0.74	8.8	11.11	6.7	96.0	8.7
Type C Premium Unit: Group Indemnity Unit: Del. Point Coverage: 60%	15.6	9.3	0.77	4.9	11.1	6.7	0.99	6.8
Type D Premium Unit: Del. Point Indemnity Unit: Del. Point Coverage: 60%	15.7	9.3	0.78	5.0	11.2	6.7	1.00	9.0
Type F Premium Unit: Group Indemnity Unit: Ind. Farm Coverage: 60%	15.6	9.3	1.13	7.3	11.11	6.7	1.20	11.0
Type E Premium Unit: Del. Point Indemnity Unit: Del. Point Coverage: 75%	15.7	11.8	1.37	% %.	11.2	8.4	1.54	13.8
Type A Premium Unit: Group Indemnity Unit: Group Coverage: 100%	15.6	15.6	2.91	18.7	11.2	11.2	2.89	23.9

	S	Swift Current-Shaunavon Area	haunavon Are	а		Average of All Three Areas	Three Areas	
Type of Insurance*	Average Yield (bushels per acre)	Level of Coverage (bushels)	Premium (bushels)	Premium as Per Cent of Yield	Average Yield (bushels per acre)	Level of Coverage (bushels)	Premium (bushels)	Premium as Per Cent of Yield
Type B Premium Unit: Group Indemnity Unit: Group Coverage: 60%	10.2	6.1	1.07	10.5	13.1	7.9	0.87	6.7
Type C Premium Unit: Group Indemnity Unit: Del. Point Coverage: 60%	10.2	6.1	1.10	10.8	13.1	7.9	0.90	6.9
Type D Premium Unit: Del. Point Indemnity Unit: Del. Point Coverage: 60%	10.2	6.1	1.10	10.8	13.3	8.0	0.91	6.9
Type F Premium Unit: Group Indemnity Unit: Ind. Farm Coverage: 60%	10.2	6.1	1.30	12.8	13.1	7.9	1.19	9.1
Type E Premium Unit: Del. Point Indemnity Unit: Del. Point Coverage: 75%	10.2	7.6	1.65	16.2	13.3	10.0	1.48	11.2
Type A Premium Unit: Group Indemnity Unit: Group Coverage: 100%	10.4	10.4	3.01	28.9	13.5	13.5	2.92	21.6

Source: Delivery point yield data from Saskatchewan Wheat Pool; see Appendix II.
\*Alphabeteid designation refers to description in full report, "Group' refers to a refers to a refer and the copressed as a proportion of the long-term average yield of the premium unit.
\*Coverage is expressed as a proportion of the long-term average yield of the premium unit.

#### RECOMMENDATIONS

There can be no doubt that a program to offset the more drastic income effects of yield variations is one of the critical requirements in stabilizing prairie agriculture. Of the limited number of programs which could be generally applied to relieve these unpredictable and damaging income effects, a system of crop insurance offers the greatest promise. It is recognized that many problems must be solved before crop insurance can be made available to the majority of farmers. Nevertheless, this Commission, after careful consideration of the evidence before it, is convinced that, in the long view, crop insurance is feasible for the Canadian prairies. Further, it is convinced that the problems of implementing a crop insurance program can be solved with a minimum of risk through an experimental approach which will permit the accumulation of operating experience under prairie conditions. The Commission therefore recommends:

# Pilot Crop Insurance Program

Recommendation No. 1. That an experimental crop insurance program be launched in Saskatchewan as a program complementary to, but separate from, the present Prairie Farm Assistance Act program; and that an intensive effort be made to find means to extend the experimental program to representative areas in the provinces of Alberta and Manitoba.

# Administrative and Financial Responsibility

In view of the inter-provincial nature of the need for crop insurance, the limited financial resources of individual provinces, the necessity of spreading risks over as wide an area as possible; and in view of the Federal Government's accumulated experience in administering the Prairie Farm Assistance Act and its earlier acceptance of responsibility for crop insurance at the time P.F.A.A. was enacted, the Commission recommends:

#### Federal Reserve Fund

Recommendation No. 2. That reserve requirements for the experimental program be provided by the Federal Government, and that central administrative functions be undertaken either by P.F.A.A. or by a new agency which would

incorporate the P.F.A.A. and crop insurance programs.

# **Provincial Participation**

Recommendation No. 3. That the participation of provincial governments in crop insurance include (a) assuming regional administrative costs and (b) acting in an advisory capacity to the program.

**Recommendation No. 4.** That regional offices be established in each experimental area in each province.

Recommendation No. 5. That local farmer committees be formed in each rate area to (a) develop interest in the crop insurance program, (b) advise the regional field office on local matters, and (c) assist in the development and maintenance of yield data.

# Plan of Insurance for Experimental Program

In view of the crop insurance experience in the United States, experience in Canada under the P.F.A.A., and the Commission's analysis of basic considerations in developing a plan of insurance for prairie farms; and in order that the maximum amount of information useful in expanding the crop insurance program may be obtained, it is recommended:

#### All-Risk Coverage

Recommendation No. 6. That the plan of insurance be all-risk insurance, covering all natural hazards (beyond the farmer's control) to which the growing crop is exposed; except that insurance as to quality (grade) not be contemplated in the initial program. It is important, however, that quality insurance be offered as soon as experience permits.

#### Wheat and Coarse Grains

Recommendation No. 7. That crop coverage in the experimental program be based on wheat, and that wheat yields provide the basic data for determining rates and indemnities. Acreage in coarse grains could be insured by applying a conversion factor computed for each rate area.

#### Three Insurance Plans

Recommendation No. 8. That three basic plans be offered:

(a) one in which premiums and coverage are calculated on the basis of average yield experience in a rate area and indemnities are paid to all insured farmers in the rate area when the average annual yield falls below the level of coverage;

(b) one in which premiums and coverage are similarly calculated on the basis of the average yield of a rate area but indemnities are paid on the basis of average yields in individual delivery points; and

(c) one in which indemnities are paid to each insured farmer whose yield falls below the level of coverage.

With reference to (b) and (c) it is suggested that the size of the rate areas be varied to test the advantages of small and large premium units.

#### **Compulsory Participation**

Recommendation No. 9. That participation in the plan be compulsory for all eligible farmers for a period of at least five to ten years, in order that farmers will have an opportunity to acquaint themselves with the program, administrators will be able to develop data necessary for refinement and expansion of the program, and practical experience will suggest necessary modifications in the original plan of insurance. It is suggested that a continuous contract, applicable to all eligible farmers, be used in each experimental area.

# Public Study and Discussion

Recommendation No. 10. That, prior to the inauguration of the experimental program in a given rate area, an intensive program of education and public discussion be undertaken to ensure the widest possible understanding of the proposed crop insurance plan; and that, following this discussion period, a

plebiscite be held to determine the preference of eligible farmers with reference to the following:

- (a) the desirability of a compulsory crop insurance plan;
- (b) the selection of one of the three types of insurance outlined in Recommendation No. 8.

#### No Land Class I

Recommendation No. 11. That insurance be limited to land in Land Classes II, III, IV, and V.

#### Insurance Unit Defined

Recommendation No. 12. That an insurance unit consist of (a) all the insurable acreage within a given rate area in which the insured has a 100 per cent interest at time of seeding; (b) all the insurable acreage within a given rate area owned by one person and operated by the insured as a share tenant; or (c) all the insurable acreage within a given rate area owned by the insured and rented to one share tenant.

#### Conversion of Bushels to Dollars

Recommendation No. 13. That coverage and premium rates be stated in both bushels of wheat and dollar equivalent; that indemnities first be determined in bushels and then converted to dollars; and that a fixed price per bushel be established to be applied in converting premiums and indemnities to dollar amounts.

# **Progressive Coverage**

Recommendation No. 14. That, with respect to the individual indemnity plan, coverage be progressive in accordance with the insured's

investment in the crop. The three stages of crop development used in the United States program—50, 90, and 100 per cent of the level of coverage—could be applied equally well in the prairie provinces.

# Standard Acreage

Recommendation No. 15. That, to avoid the trouble and expense of securing annual acreage reports from each farmer, a standard acreage be used for the life of the continuous contract, the amount to be submitted by the farmer when insurance is first issued. Any substantial change in acreage devoted to grains could be adjusted at time of seeding.

#### Premiums Collected as Levy on Marketings

Recommendation No. 16. That premiums be collected as a proportion of grains marketed at the time of delivery to the elevator.

# **Premium Reductions**

Recommendation No. 17. That moderate reductions in premium rates be made to individual farmers and to rate areas showing consistent yield experience unusually higher than normal.

#### Sound Cultural Practice

Recommendation No. 18. That, since failure to follow adequate crop rotation practices results in lower and more variable yields, methods of compensating for this factor in the rate or indemnity structure be fully explored. Some method of adjustment would be highly desirable, not only to minimize individual inequities, but also to encourage sound soil management.

#### Collateral Assignment For Credit Purposes

Recommendation No. 19. That provision be made for collateral assignment of indemnities as an assistance to farmers in obtaining credit. This provision would be primarily applicable to those areas

in which individual indemnities are payable.

#### No P.F.A.A. in Crop Insurance Areas

Recommendation No. 20. That areas which qualify for crop insurance be excluded from P.F.A.A. coverage and levies.

# Actuarial Basis for Experimental Program

In view of the careful and continuing attention to sound actuarial principles required to ensure that the crop insurance scheme will be self-liquidating, the Commission recommends:

#### Coverage at 60 Per Cent of Long-Term Yield

Recommendation No. 21. That coverage be 60 per cent of the long-term area average yield for all plans, and that, once the preference of the majority of eligible farmers is known, only a single plan be offered in any given rate area.

# Upper Limits on Premiums

Recommendation No. 22. That, with respect to the group indemnity plan, the maximum premium rate be 10 per cent of the long-term average yield in order to assure that crop insurance at reasonable cost will be available in all parts of the experimental area. The exclusion of Class I land should make such a maximum feasible and, in fact, should permit an eventual reduction in premium rates.

#### Collection of Yield Data

Recommendation No. 23. That data on individual farm yields be collected in a systematic manner and used in adjusting area premium rates where necessary.

#### **Annual Rate Review**

Recommendation No. 24. That, once the crop insurance plan is in operation, actual crop insurance experience be incorporated into the premium rates on the basis of an annual review, but that no major change in rate structure be adopted as the result of a single year's crop experience.

# No Loading of Rates

Recommendation No. 25. That, since the evidence suggests that rates indicated for the Saskatchewan test areas are adequate to cover losses and build up a modest reserve over the long run, no additional loading of rates be considered during the initial test period.

# Reserve Based on 1954 Losses

Recommendation No. 26. That the initial reserve be established on the basis of covering losses which would occur if the yield experience of 1954 were to be repeated.

#### Risk Reinsurance

**Recommendation No. 27.** That steps be taken to reinsure a portion of the risk of the wheat insurance program,

# Prairie Farm Assistance Act

In consideration of the facts (a) that the development of a comprehensive crop insurance program will take a number of years, (b) that, in any event, crop insurance will probably not be feasible in areas of exceptionally high risk, and (c) that the Prairie Farm Assistance Act is geared to 1939 conditions, the Commission recommends:

#### Continue P.F.A.A.

Recommendation No. 28. That, whatever developments take place in crop insurance, P.F.A.A. be continued in order to assure a minimum level of crop loss protection in all agricultural areas of the prairie provinces.

#### **Improve Benefits**

Recommendation No. 29. That P.F.A.A. be amended to:

- (a) Eliminate those sections of the Act which exclude certain alienated Crown lands and irrigated lands;
- (b) Increase payment schedules to reflect increases in levies collected and increases in farm production costs since 1939;
- (c) Raise limits on the eligible acreage per farm in proportion to average farm size increases since 1939;
- (d) Provide four categories of payments instead of two within the 0 to 8 bushel range of yields.

#### SUGGESTIONS FOR THE USE OF THIS PAMPHLET

The full value of the reports of the Royal Commission on Agriculture and Rural Life will largely depend on study and discussion by the people of Saskatchewan. This summary of the official report has been prepared for the convenience of individuals and for group and community studies.

If community studies are to be carried on with one or more Commission reports the following guides are suggested:

- 1. Whenever possible a representative committee should be selected to stimulate interest and to make arrangements for the first community meeting.
- 2. When the community meeting is held and it is decided to proceed with the study of one or more of the Commission's reports, committees should be selected to study a particular report or sections of a report.
- 3. Arrangements should be made for a series of monthly or semimonthly meetings at which each committee in turn can give leadership in the discussion of that report or section of a report assigned to it. Copies of the summaries of the reports being studied should be available for all participants.
- 4. Wherever possible the findings of the Commission should be related to the conditions in the community undertaking the study.
- 5. Arrangements should be made to report the results of the community's discussions and its judgment of the recommendations to provincial organizations, Members of the Legislative Assembly, and others who may wish to take action on the Commission's findings and recommendations.

ANY INDIVIDUAL OR ORGANIZATION WISHING ASSISTANCE OR FURTHER INFORMATION ON PROCEDURES FOR THE STUDY OF COMMISSION REPORTS SHOULD WRITE TO THE SECRETARY OF THE ROYAL COMMISSION ON AGRICULTURE AND RURAL LIFE, LEGISLATIVE BUILDING, REGINA.

This is a public pamphlet, containing only the Conclusions and Recommendations of the Royal Commission on Agriculture and Rural Life to the Government of Saskatchewan, on the topic indicated. Similar pamphlets are available on the following topics:

MECHANIZATION AND FARM COSTS
AGRICULTURAL CREDIT
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